REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the current amendments and the following discussion, is respectfully requested.

Claims 1, 5, 11, 14-17, and 19 are pending in the present application, Claims 1, 5, 14-17, and 19 having been amended, and Claims 2-4, 6-10, 12, 13, and 18 having been canceled without prejudice or disclaimer. Support for the amendment to Claims 1, 5, 11, and 14-19 is found, for example, in Figs. 6 and 15, and their corresponding descriptions in the specification. Applicants respectfully submit that no new matter is added.

In the outstanding Office Action, Claims 1-19 were rejected under 35 U.S.C. §102(e) as anticipated by Muraji et al. (U.S. Patent No. 6,867,582, hereinafter Muraji).

With respect to the rejection of Claim 1 as anticipated by Muraji, Applicants respectfully submit that the amendment to Claim 1 overcomes this ground of rejection. Amended Claim 1 recites

> An angular-position magnetic-sensor device comprising:
>
> a stator and a rotor, wherein the rotor is made of a ferromagnetic material and disposed in an interior of the stator, said rotor including two rotor parts that each include a magnetic pole, and said two rotor parts are separated from one another by a magnet;
>
> a space between said stator and a magnetized portion of said rotor, defining over substantially 360°, as a main air gap; and
>
> said stator including two secondary air gaps, wherein at least one of the two secondary air gaps includes a magnetosensitive element, and entire sides of said two secondary air gaps respectively extend according to two parallel straight lines,
>
> wherein said stator includes two pole shoes having angular widths that are substantially equal to 120° and 240° respectively that surround the rotor.

Muraji does not disclose or suggest every element of amended Claim 1.

In a non-limiting embodiment of the invention defined by Claim 1 shown in Applicants' Fig. 15, the rotor is disposed in an interior of the stator. As shown in Fig. 15, the rotor includes two parts that each include a magnetic pole, and are separated from one another by a magnet.[1]

In the invention defined by Claim 1, the rotor is made of a ferromagnetic material.[2] The ferromagnetic material, the magnetic poles in each of the two parts of the rotor, and the magnet separating the two parts of the rotor magnetize the rotor over 360°. The figure filed with the response on January 10, 2007 shows the distribution of the magnetic field lines in a sensor. As shown in the figure, the magnetic flux circulates in all 360°. Thus, in the invention defined by Claim 1, a space between the stator and a magnetized portion of the rotor, defining over substantially 360°, is a main air gap.

Further, Fig. 6 shows a non-limiting example of a stator including two secondary air gaps. As shown in Applicants' Fig. 6, the entire sides of the two secondary air gaps respectively extend according to two parallel straight lines.[3]

Muraji describes a rotary sensor. Fig. 1 of Muraji shows a cylindrical rotor on an outer side of the stator. Thus, Fig. 1 of Muraji does not disclose or suggest the claimed "wherein the rotor is...disposed in an interior of the stator." Further, Fig. 1 of Muraji does not disclose or suggest the "main air gap" and "secondary air gaps" as described in amended Claim 1.

Further, Fig. 1 of Muraji does not disclose or suggest "said rotor including two rotor parts that each include a magnetic pole, and said two rotor parts are separated from one another by a magnet." As shown in Fig. 1, stator 2 is one part. Stator 2 does not have two

[1] Specification, page 14, lines 5-13.
[2] Specification, page 8.
[3] Specification, page 10, lines 10-16, and Fig. 6.

parts separated from one another by a magnet. Magnet 3 does not separate one rotor part from another rotor part.

Fig. 4 of Muraji shows another rotary sensor. As shown in Fig. 4, the rotor 116 is outside of stators 111 and 112. Thus, Fig. 4 of Muraji does not disclose or suggest the claimed "wherein the rotor is...disposed in an interior of the stator."

Further, Fig. 4 of Muraji does not disclose or suggest "said rotor including two rotor parts that each include a magnetic pole, and said two rotor parts are separated from one another by a magnet." As shown in Fig. 4, rotor 116 is one part. Rotor 116 does not have two parts separated from one another by a magnet. Magnets 114 and 115 do not separate one rotor part from another rotor part.

Further, the gap separating stator 112 and 113 does not equate to the claimed "said stator including two secondary air gaps, wherein...entire sides of said two secondary air gaps respectively extend according to two parallel straight lines." Rather, the gap between stator 112 and 113 is formed by an oddly shaped partially curved region that does not extend according to two parallel straight lines.

Further, Fig. 4 of Muraji does not disclose or suggest "a space between said stator and a magnetized portion of said rotor, defining over substantially 360°, as a main air gap." The space between the magnetized portion of rotor 116 and stators 112 and 113 is only about 90°.

Fig. 7(c) or Muraji shows another rotary sensor. However, Fig. 7(c) shows that rotor 146 is outside of stators 141 and 142. Thus, Fig. 7(c) of Muraji does not disclose or suggest the claimed "wherein the rotor is...disposed in an interior of the stator."

Further, Fig. 7(c) of Muraji does not disclose or suggest "said rotor including two rotor parts that each include a magnetic pole, and said two rotor parts are separated from one another by a magnet." As shown in Fig. 7(c), rotor 146 is one part. Rotor 116 does not have

two parts separated from one another by a magnet. Magnets 144 and 145 do not separate one rotor part from another rotor part.

Further, the gap separating stator 142 and 141 does not equate to the claimed "said stator including two secondary air gaps, wherein...entire sides of said two secondary air gaps respectively extend according to two parallel straight lines." Rather, the gap between stator 141 and 142 is formed by an oddly shaped partially curved region that does not extend according to two parallel straight lines.

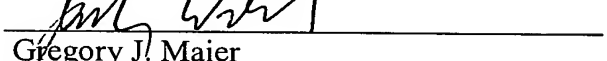
Further, Fig. 7(c) of Muraji does not disclose or suggest "a space between said stator and a magnetized portion of said rotor, defining over substantially 360°, as a main air gap." The space between the magnetized portion of rotor 146 and stators 141 and 142 is only about 240°. Muraji does not disclose or suggest that the right-side portion of rotor 146 in Fig. (c) is magnetized. Thus, the right-side portion is not considered, and Muraji does not disclose or suggest "a space between said stator and a magnetized portion of said rotor, defining over substantially 360°, as a main air gap."

In view of the above-noted distinctions, Applicants respectfully submit that Claim 1 (and any claims dependent thereon) patentably distinguish over Muraji.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599
Joseph Wrkich
Registration No. 53,796

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

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